

CLAIMS

For the convenience of the Examiner, all claims have been presented whether or not an amendment has been made. The claims have been amended as follows:

1. **(Currently Amended)** A method of processing a database service query, comprising:

receiving a service query,

obtaining a sum of terms associated with the service query by expanding at least one nested term into one or more un-nested terms,

evaluating ~~each term as a separate~~ the sum of terms as a plurality of SQL instruction instructions, and

~~executing each separate SQL instruction. determining a plurality of results associated with the sum of terms, and~~

~~deleting or disregarding at least one duplicate result associated with the sum of terms.~~

2. **(Original)** The method as claimed in claim 1, further comprising expanding each term to remove NOT operators.

3. **(Original)** The method as claimed in claim 2, wherein the sum of terms are expanded using Boolean logic.

4. **(Original)** The method as claimed in claim 1, in which the service query is an X.500 or LDAP service query.

5. **(Original)** The method as claimed in claim 1, in which the service query is a search service query.

6. **(Withdrawn)** A method of processing a database service query, comprising:
determining a SQL instruction representative of a function;
listing the results of a subtracted SQL instruction in a first list, listing the results of a non-subtracted SQL instruction in a second list; and
not listing results which are duplicates of previously listed subtracted or non-subtracted results.

7. **(Withdrawn)** The method as claimed in claim 6, in which the service query is an X.500 or LDAP query.

8. **(Withdrawn)** The method as claimed in claim 6, in which the service query is a search service query.

9. **(Currently Amended)** A system for processing a directory service query, comprising:

a database using a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data; and

means for processing a service query by:

obtaining a sum of terms by expanding at least one nested term into one or more un-nested terms,

evaluating each term as a separate the sum of terms as a plurality of SQL instruction instructions, and

~~executing each separate SQL instruction. determining a plurality of results associated with the sum of terms, and~~

~~deleting or disregarding at least one duplicate result associated with the sum of terms.~~

10. **(Previously Presented)** The directory service arrangement as claimed in claim 9, further comprising means to perform X.500 or LDAP services.

11. **(Withdrawn)** A directory service arrangement comprising:

a database using a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data, and

means for processing a service query by determining a SQL instruction representative of a function, listing the results of a subtracted SQL instruction in a first list, listing the results of a non-subtracted SQL instruction in a second list, and not listing results which are duplicates of previously listed subtracted or non-subtracted results.

12. **(Withdrawn)** The directory service arrangement as claimed in claim 11, further comprising means to perform X.500 or LDAP services.

13. **(Withdrawn)** A method for processing a database service query, comprising:
translating a service query to an expression;
simplifying the expression to a number of smaller expressions, each smaller expression being capable of being flattened;
flattening each smaller expression; and
executing each flattened expression.

14. **(Currently Amended)** A method of processing a directory service query, comprising:

receiving a directory service query,
obtaining a sum of terms by expanding at least one nested term into one or more un-nested terms,
mapping the sum of terms to a plurality of SQL instructions,
~~evaluating each mapped term as a separate SQL instruction, and~~
~~executing each separate SQL instruction. determining a plurality of results associated with the sum of terms, and~~
~~deleting or disregarding at least one duplicate result associated with the sum of terms.~~

15. **(Previously Presented)** The method as claimed in claim 14, further comprising expanding each term to remove NOT operators.

16. **(Original)** The method as claimed in claim 15, wherein the sum of terms are expanded using Boolean logic.

17. **(Previously Presented)** The method as claimed in claim 14, in which the service query is an X.500 or LDAP service query.

18. **(Previously Presented)** The method as claimed in claim 14, in which the service query is a search service query.

19. **(Withdrawn)** A method of processing a directory service query, comprising:
determining a SQL instruction representative of the directory service query;
listing the results of a subtracted SQL instruction in a first list, listing the results of a non-subtracted SQL instruction in a second list; and
not listing results which are duplicates of previously listed subtracted or non-subtracted results.

20. **(Withdrawn)** The method as claimed in claim 19, in which the service query is an X.500 or LDAP query.

21. **(Withdrawn)** The method as claimed in claim 19, in which the service query is a search service query.

22. **(Currently Amended)** A system for processing a directory service query, comprising:

a database using a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data; and

means for processing a directory service query by:

obtaining a sum of terms by expanding at least one nested term into one or more un-nested terms,

mapping the sum of terms to a plurality of SQL instructions,

~~evaluating each mapped term as a separate SQL instruction, and~~

~~executing each separate SQL instruction. determining a plurality of results associated with the sum of terms, and~~

~~deleting or disregarding at least one duplicate result associated with the sum of terms.~~

23. **(Previously Presented)** The directory service arrangement as claimed in claim 22, further comprising means to perform X.500 or LDAP services.

24. **(Withdrawn)** A directory service arrangement comprising:

a database using a plurality of tables, each table having a plurality of rows and columns, and storing arbitrary data, and

means for processing a directory service query by determining a SQL instruction representative of the directory service query, listing the results of a subtracted SQL instruction in a first list, listing the results of a non-subtracted SQL instruction in a second list, and not listing results which are duplicates of previously listed subtracted or non-subtracted results.

25. **(Withdrawn)** The directory service arrangement as claimed in claim 24, further comprising means to perform X.500 or LDAP services.

26. **(Withdrawn)** A method for processing a directory service query, comprising:
translating a directory service query to an expression;
simplifying the expression to a number of smaller expressions, each smaller
expression being capable of being flattened;
flattening each smaller expression; and
executing each flattened expression.

27. **(Currently Amended)** The method of claim 1 wherein:
evaluating the sum of terms comprises converting the sum of terms to a plurality
of SQL instructions comprising at least one negative term;
and further comprising:
subtracting at least one result associated with the at least one negative term.
~~obtaining a plurality of results wherein each separate SQL instruction is associated~~
~~with one or more results; and~~
~~combining the one or more results associated with each separate SQL instruction.~~

28. **(Currently Amended)** The method of claim 27 1, wherein obtaining a sum
of terms comprises:
~~evaluating each term as a separate SQL instruction comprises:~~
~~identifying at least one term associated with at least one NOT operator; and~~
~~expanding the at least one term associated with the at least one NOT operator into at~~
~~least one negative term.;~~
~~obtaining a plurality of results comprises obtaining one or more negative results~~
~~associated with the at least one negative term; and~~
~~combining the one or more results comprises subtracting the one or more negative~~
~~results associated with the at least one negative term.~~

29. **(Currently Amended)** The method of claim 1, wherein: 27, further comprising, subsequent to obtaining a plurality of results:

if the service query comprises a term having at least two NOT operators, deleting or disregarding a third-order term corresponding to the term having at least two NOT operators.

identifying one or more duplicate results; and

deleting or ignoring the one or more duplicate results.

30. **(Currently Amended)** The method of claim 1, wherein obtaining a sum of terms comprises:

evaluating each term as a separate SQL instruction comprises:

identifying at least one term associated with at least one NOT operator; and

expanding the at least one term associated with at least one NOT operator into at least one negative term and at least one positive term.

31. **(Previously Presented)** The method of claim 30, further comprising:

obtaining a plurality of results wherein each term is associated with one or more results;

generating a first list comprising one or more results associated with the at least one negative term;

generating a second list comprising one or more results associated with the at least one positive term; and

removing or omitting from the second list one or more results associated with the at least one negative term.